

GTP 1638

PATENT  
0147-0191P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: KWART, Marion et al. Conf.: 1628  
Appl. No.: 09/485,187 Group: 1638  
Filed: June 26, 2000 Examiner: KUBELIK, A  
For: PROCESSES FOR INCREASING THE YIELD IN  
PLANTS

TECH CENTER 1638-2900

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REPLY TO RESTRICTION REQUIREMENT

Assistant Commissioner for Patents  
Washington, DC 20231

October 16, 2001

Sir:

In reply to the Restriction Requirement dated August 16, 2001, the period for Response having been extended by one (1) month, the Examiner has Required Restriction between the claims of Group I (claims 1-4 and 8-15), Group II (claims 1-3, 5 and 8-15), Group III (claims 1-3 and 6-15) and Group IV (claims 1-3 and 8-15). This Requirement is respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Examiner asserts that the invention listed as Group I-IV do not relate to a single general inventive concept under PCT Rule 13.1. Applicants submit, however, that the Examiner has not properly construed or applied the unity of the invention standard applicable under PCT Rule 13.

Under PCT Rule 13.2, the application fulfills the unity of invention requirement when there is a "technical relationship among those inventions involving one or more of the same or corresponding 'special technical features'". The rule defines that the expression "special technical features" means those technical features that define a contribution, which each of the inventions, considered as a whole, makes over the prior art. In the present application, the "technical relationship" or "special technical feature" involved with all of claims is the fundamental invention based on a process for increasing plant yields using recombinant DNA molecules containing a companion cell specific promoter and a polypeptide selected from the group consisting of proteins with enzymatic activity that cleave sucrose, sucrose transporters, proteins that stimulate the proton gradients located at the plasma membrane of plant cells and citrate synthases. As explained, for example, on page 2 of the instant Specification, expression of these proteins specifically in the phloem of plants leads to a dramatic increase in yield; that is, at least a 3% increase in biomass when compared to non-transformed plants of the same genotype, cultivated under the same conditions. In addition, figures 15 and 16 show the actual increases that in fresh weight according to the invention. Applicants submit that this technical relationship and special technical feature is common to the

invention recited in all the claims and thereby provides clear unity of invention.

In her Office Action, the Examiner contends that the method of increasing the yield and plants by a transformation or the construct that uses a companion cell promoter is disclosed by Lerchl et al. The Examiner refers to figure 5 of this reference. Figure 5, however, provides no information regarding an increase in biomass (yield). Instead, figure 5 shows changes in glucose, sucrose, fructose and starch content based on a program fresh weight basis. Thus, there is no information here that indicates an increase in starch content, for example, correlates with an increase in fresh weight of tissue. The Examiner also contends that the Restriction groups are deemed to lack unity of invention because different genes encoding very different kinds of enzymes are used.

The Examiner will note that no unity of invention objection was raised in the International Phase of this application, which also applies the unity of invention standard of PCT Rule 13. Applicants suggest that the Examiner has incorrectly applied the phrase "considered as a whole" which is part of Rule 13.2. This phrase should be interpreted to mean the total combination of the inventions, not each single invention. Thus, it is the contribution that the **total** combinations of all of the inventions

make over the prior art that is important, not the contribution that each of the single inventions makes individually.

An International Application which complies with these unity of invention requirements must then be excepted by all of the designated and elected offices, including the U.S. Patent and Trademark Office (USPTO), since Article 27(1) of the Patent Cooperation Treaty does not permit any National Law or National Office to require compliance with different regulations relating to the contents of the International Application. Thus, the U.S. application must be examined for unity of invention consistent with the Patent Cooperation Treaty, not just by giving verbal ascent to the unity of invention standard, but in actual application of the standard. See *Caterpillar, Tractor Co. v. Commissioner of Patent and Trademarks*, 231 USPQ 590 (E.D.VA. 1986). For the above reasons, Applicants request that the Restriction Requirement be withdrawn in its entirety and that all the claims be examined in this application. In order to be fully responsive to the Office Action, however, Applicants elect, with traverse, should the Examiner persist in the Requirement, to prosecute the claims of Group II, comprising claims 1-3, 5 and 8-15, drawn to a method for increasing the yield of plants via expression of constructs encoding sucrose transporters, those constructs and the plants so obtained.

Favorable action and early allowance on all the claims are earnestly solicited.

Pursuant to 37 C.F.R. 1.17 and 1.136(a), the Applicants respectfully request a one (1) month extension of time for filing this Response in connection with the present application and the required fee of \$110.00 is attached hereto.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Leonard Svensson (Reg. No. 30,330) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

I hereby certify that this correspondence is being transmitted by the United States Postal Service as first class mail, postage prepaid, in an envelope to: Commissioner of Patents and Trademarks, Washington

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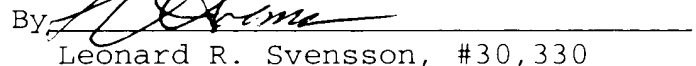
BIRCH, STEWART, KOLASCH & BIRCH, LLP

  
(Signature)

LRS/SWG/clh October 16, 2001  
0147-0193P (Date)

Respectfully submitted,

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By:   
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